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10/520,751	06/22/2005	Stefano Fanfani	71653	5102

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EXAMINER	
MOORE, KARLA A	

ART UNIT	PAPER NUMBER
1792	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/520,751	FANFANI, STEFANO	
	Examiner	Art Unit	
	KARLA MOORE	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *24 and 25* is/are allowed.

6)☒ Claim(s) *1-4,8-9,11-15,17-20,22-23* is/are rejected.

7)☒ Claim(s) *5-7,10,16 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 8-9, 11-15, 18-20 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,895,531 to Vignola in view of German Patent No. 19826259 A1 to Burger et al. (U.S. Patent Publication No. 2002/0100420 is used as a working translation of Burger et al. All references to the disclosure of Burger et al. are with respect to the U.S. document).

3. Vignola discloses a plant for vacuum metallization of objects treated in batches in Figures 1-12 substantially as claimed and comprising: a vacuum chamber (12); at least one part carrying system (66) movable inside said vacuum chamber; at least one discharge electrode (106); at least one diffuser (102 and 104) associated with said discharge electrode for introduction of at least one fluid substance; a housing (14) containing at least partly said discharge electrode and/or said diffuser; wherein said discharge electrode, said housing and said diffuser are elongated and extend parallel to a longitudinal axis of said vacuum chamber, and said housing is opened parallel to said axis.

4. However, Vignola fails to teach said housing is arranged inside said vacuum chamber, in an approximately central position.

5. Burger et al. teach providing a housing at a central portion of a vacuum metallization chamber for the purpose of preventing the formation of plasma in undesired locations of the vacuum metallization chamber (paragraph 23). A discharge electrode (Figures 1 and 2, 15) is at least partly contained by the housing. Burger et al. also teach that the type and arrangement (e.g. on inner wall of the chamber or centrally located) of a plasma source (or sources) can be chosen in accordance with constructive and process-technical conditions (paragraphs 6 and 21-23).

6. It would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to have provided a housing in Vignola in order to prevent formation of plasma in undesired locations of the vacuum metallization chamber as taught by Burger et al. It would have also been obvious to choose a type and arrangement of plasma sources for the vacuum metallization chamber in accordance with constructive and process-technical positions as taught by Burger et al.

7. With respect to claim 2, in Vignola, said part carrying system rotates about an axis of rotation inside the vacuum chamber (column 4, rows 31-37).

8. With respect to claims 3 and 12-15, in the combined teachings of Vignola and Burger et al., said housing has the form of a substantially semi-cylindrical (arched, cylindrical, etc.) wall surrounding at least partially (arranged inside) said discharge electrode and said diffuser.

9. With respect to claim 4, in the combined teachings of Vignola and Burger et al., said housing is arranged inside said part carrying system.

10. With respect to claim 8, the vacuum chamber of Vignola has a frontally closing hatch (16) and a substantially horizontal longitudinal axis and said part-carrying system can be inserted and extracted from said vacuum chamber.

11. With respect to claim 9, in the combined teachings of Vignola and Burger et al., said housing, said discharge electrode and said diffuser have a horizontal extension substantially parallel to the axis of said vacuum chamber.

12. With respect to claim 11, in the combined teachings of Vignola and Burger et al., said housing said discharge electrode and said diffuser are mounted on an end of said chamber substantially opposite the hatch for closing thereof.

13. With respect to claims 18-20, the apparatus of Vignola comprises a plurality of diffusers enclosed in a volume protected by said housing. With respect to the materials supplied through the diffusers, the courts have ruled that claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). The courts have also ruled that expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969).

14. With respect to claim 22, both Vignola and Burger et al. teach that two or more housings may be provided arranged in the vacuum chamber with corresponding discharge electrodes and diffusers.

15. With respect to claim 23, said part carrying system in Vignola comprises a carousel rotating about a main axis of rotation and a series of part carrying devices rotating about respective auxiliary axes parallel to the main axes of rotation, the parts

thus being imparted a planetary motion inside the vacuum chamber (column 4, rows 23-42).

16. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vignola and Burger et al. as applied to claims 1-4, 8-9, 11-15, 18-20 and 22-23 above, and further in view of 2001/0054391 A1to Dunham.

17. Vignola and Burger disclose the invention substantially as claimed and as described above, including the diffuser comprising a plurality of calibrated holes distributed along the longitudinal extension thereof and the diffuser being connected to a duct supplying a product to be diffused inside the vacuum chamber on a first end and being closed on a second end.

18. However, Vignola and Burger et al. fail to disclose a diameter of the holes increasing from the first end to the second end.

19. Dunham teaches that it is known in the art to determine the dimensions of gas flow structures through computer modeling for the purpose of producing optimum uniformity characteristics and gas flow characteristics (paragraph 32).

20. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided holes of optimized diameter(s) according to computer modeling in Vignola and Burger in order to produce optimum uniformity characteristics and gas flow characteristics as taught by Dunham.

Allowable Subject Matter

21. Claims 5-7, 10, 16 and 21 would appear to be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

22. Claims 24 and 25 are allowed.

23. The following is a statement of reasons for the indication of allowable subject matter and statement of reasons for allowance: The prior art of record fails to teach and/or fairly suggest a vacuum metallizing plant as recited in the claims, wherein said housing, said discharge electrode and said diffuser are movable with said part-carrying system so as to be inserted into said chamber and extracted therefrom. Further, no other properly combinable art was located that provided the missing teachings along with the requisite motivation for combination.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

24. Applicant's arguments filed 8 February 2008, regarding claims 1-4, 8-9, 11-15, 17-20 and 22-23, have been fully considered but they are not persuasive.

25. In response to applicant's argument that Vignola and Burger are nonanalogous art with one another and/or with the presently claimed invention, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be

reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, each of the prior art references are drawn to optimization of processing in a plasma processing apparatus, similar to the present application. It is further noted that Burger teaches that the disclosed apparatus is not limited to a microwave source. Other plasma generations sources, e.g. discharge electrodes, may also be used.

26. In response to Applicant's argument that the intended use of the screen(s) in Burger is different than that of the housing of the claimed invention, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In the instant case the prior art structure would be capable of such a use. However, it is also noted that Examiner does not acquiesce that the intended use of Burger and the claimed invention are substantially or even marginally different. Examiner would submits that use of a enclosing housing to keep a plasma concentrated in a certain area and the use of an enclosing shield to prevent formation of plasma in undesired locations are substantially the same phenomenon.

27. Applicant, has also argued that the at most the configuration of the screen in Burger shows that a screen may be arranged in a ceiling of the vacuum chamber, rather than extending in a direction parallel to a longitudinal axis of said vacuum chamber. Examiner disagrees. The screens are used to confine the plasma. One or ordinary skill would recognize that use of a screen only at the ceiling of a plasma apparatus would

serve no such purpose when the rest of the apparatus offers no boundary to the plasma created and especially when processing elongated substrates in an elongated processing apparatus as disclosed in Burger. Such a proposed configuration is nonsensical. As Figure 2, which does show the shield, is explicitly described as a top view only of the apparatus, one of ordinary skill would be more than capable of deducing that the shield is meant to extend in the claimed direction. Furthermore, Applicant's claims do not specify exactly how far said housing extends in the direction parallel to the longitudinal axis of the vacuum chamber. In the broadest of interpretations, any length can be considered an extension in a direction.

Conclusion

28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patents 4282597, 6021738, 6708645 disclose vacuum metallization apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARLA MOORE whose telephone number is (571)272-1440. The examiner can normally be reached on Monday-Friday, 9:00 am-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571.272.1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Karla Moore/
Primary Examiner, Art Unit 1792
21 April 2008